

# CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE



## CALIFORNIA AGRICULTURE DETECTOR DOG TEAM PROGRAM

**Semiannual Report**  
**July 1, 2014 - December 31, 2014**

*Pictured: San Bernardino County Detector Dog Bishop and handler Kristina Cummings.  
Photo taken by Joshua Hardeman and courtesy of San Bernardino County Agricultural  
Commissioner Office*

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### **Purpose of Cooperative Agreement #14-8506-1165-CA**

The purpose of cooperative agreement USDA #14-8506-1165-CA is to implement the use of the California Agriculture Detector Dog Teams (herein referenced as California Dog Teams) to enhance inspection and surveillance activities related to plant products entering the State of California via parcel delivery facilities and airfreight terminals for the purpose of excluding the introduction of plant pests that may negatively impact agriculture.

### **Work Plan Activities Performed by CDFA**

CDFA oversaw and provided guidance for the statewide California Dog Team Program and distributed funds through cooperative agreements to County Agricultural Commissioners (CAC) for the purposes of fulfilling California Dog Team activities as outlined in the CDFA/CAC cooperative agreement. CDFA verified all expenses approved for payment to county agricultural commissioner cooperators were legitimate expenses as outlined in the CDFA/CAC cooperative agreement. CDFA acted as the liaison between CAC and the National Detector Dog Training Center (NDDTC) and was responsible for communicating significant pest finds and smuggling information to USDA/SITC.

### **Work Plan Activities Performed by County Agricultural Commissioners**

The California Dog Teams and inspectors were distributed as outlined in **Table 1** below. Nine of the eleven California Dog Teams worked parcel facilities for the full reporting period (July 1, 2014 - December 31, 2014): Alameda (1 team), Contra Costa (2 teams), Fresno (1 team), Los Angeles (2 teams), Sacramento (1 team), San Bernardino (1 team) and San Diego (1 team).

**TABLE 1: Distribution of CA Dog Teams**

<b>County</b>	<b>Area Covered</b>	<b># of Teams</b>
Alameda	Alameda County	1
Contra Costa	San Francisco Bay Area	2
Fresno	Fresno County	1
Los Angeles	Los Angeles County	2
Sacramento	Sacramento Valley	1
San Bernardino	Inland Empire Area	2
San Diego	San Diego County	2
San Joaquin	San Joaquin County	1
Santa Clara	South Bay Area	1

During this reporting period Venus, one of the San Diego canines, required shoulder surgery in July. Since the surgery, she has been receiving platelet- rich plasma injections to promote healing of the elbow joint. She has remained on a light to moderate work schedule to limit the amount of high impact on her elbow.

The second team that did not work the full reporting period was in Santa Clara County. The handler gave his notice to leave employment in August 2014.

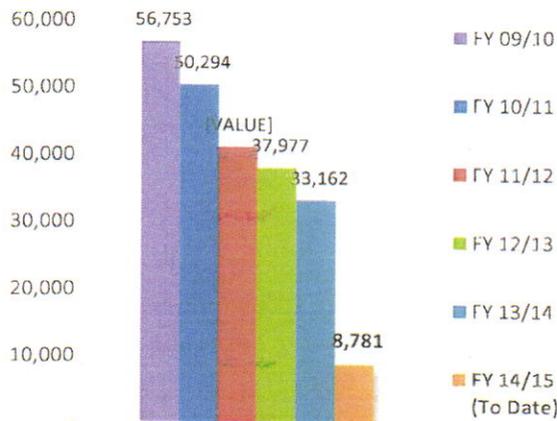
### **Summary of Dog Team Interceptions**

The California Dog Teams continue to demonstrate that unmarked parcels present a high-risk pathway for significant agricultural pests to enter California. The graphs below compare data for five agreement periods of the California Dog Team Program. The graphs illustrate that the

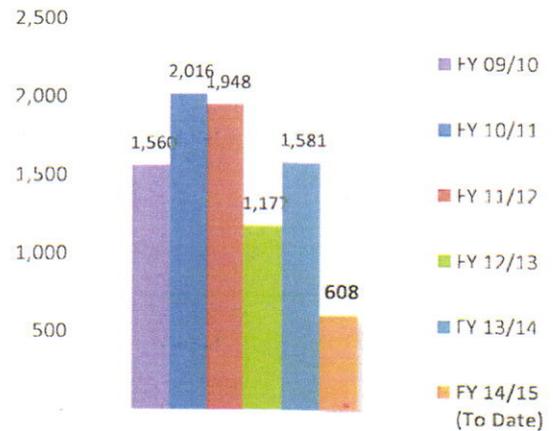
number of total parcels alerted on by the canines (**Graph 1**) and Plant Quarantine violations (**Graph 2**) have decreased, while the number of unmarked parcel alerts (**Graph 3**) and pest finds (**Graph 4**) have increased over time. This comparison demonstrates the California Dog Teams have improved their proficiency with time and experience. The decrease in Plant Quarantine violations suggests that education and presence of California Dog Teams in parcel facilities is improving compliance with existing laws and regulations.

For the first six months of the agreement period (July 1, 2014 – December 31, 2014), California Dog Teams alerted on 8,781 total marked and unmarked parcels containing agricultural products. Of the total alerts, 794 were **unmarked** parcels containing agricultural commodities. A total of 289 pests were intercepted by California Dog Teams during the reporting period. Some of these interceptions involved multiple pest specimens in a single package. Additionally, due to the efforts of the California Dog Teams, 608 rejections have been issued for violations of state and federal plant quarantine laws and regulations.

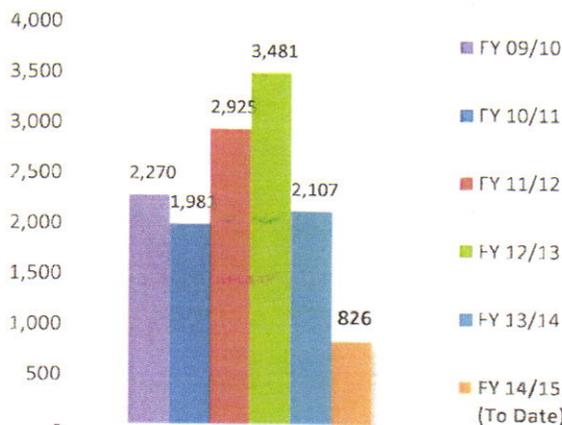
**Graph 1: Total Parcel Alerts**



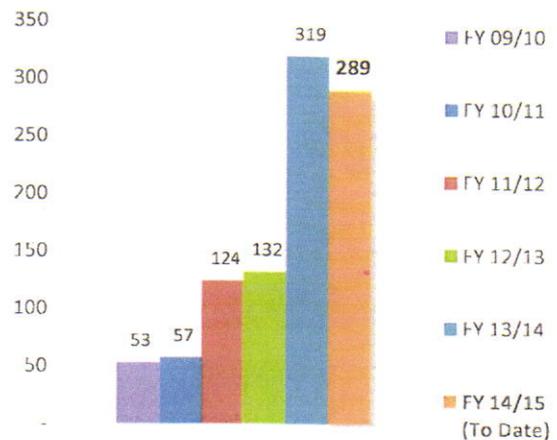
**Graph 2: Violations of Plant Quarantine Laws and Regulations**



**Graph 3: Total Unmarked Parcel Alerts**

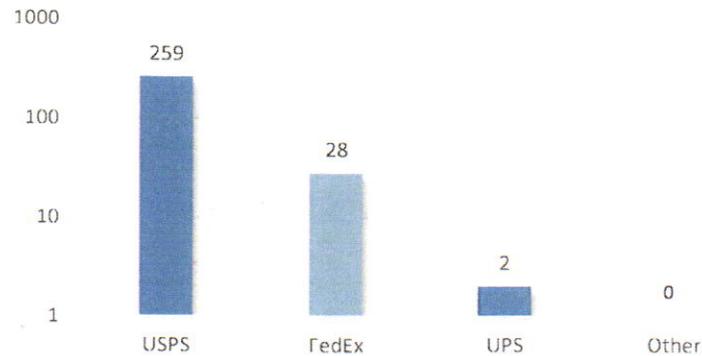


**Graph 4: Actionable Pest Finds**



**Graph 5** below illustrates the parcel facilities where pests have been intercepted. The California Dog Teams have increased inspection hours at the United States Postal Service (USPS) because the data shows that this is a very important pathway to monitor for actionable pests. Efforts also continue to get the warrant process streamlined to allow the opening of parcels when inspectors are unable to gain consent of the shipper or receiver for parcels in the USPS pathway.

**Graph 5: CA Dog Teams- Pest Interception Totals per Facility Type**



### Significant Pest Interceptions

For the first six months of the agreement period (July 1, 2014 – December 31, 2014), California Dog Teams were extremely successful at protecting California agriculture by intercepting significant pests of agriculture before they could be introduced into California. The data in **Graph 4** shows that in the first six months of this agreement period, the teams have already superseded the best 12-month period on record. **Table 2** below lists the number and type of actionable pests which included 19 actionable A-rated pests and 115 actionable Q-rated pests found as a result of the efforts of the California Dog Teams during the reporting period.

**Table 2: Significant Pests Interceptions**  
July 1, 2014 – December 31, 2014

Interceptions	Scientific Name	Common Name	Rating	Origin
1	<i>Acari order</i>	mites/ticks	Q	HI
1	<i>Aceria annonae</i>	eriophyid mite	Q	PR
3	<i>Aleurocanthus woglumi</i>	citrus blackfly	A	FL (3)
1	<i>Aleurotrachelus sp.</i>	whitefly	Q	FL
1	<i>Anastrepha obliqua</i>	West Indian fruit fly	A	PR
2	<i>Anastrepha sp.</i>	exotic fruit fly	A	FL (2)
5	<i>Anastrepha suspensa</i>	Caribbean fruit fly	A	FL (5)
1	<i>Anoplolepis gracilipes</i>	ant	Q	HI
1	<i>Aonidiella aurantii</i>	california red scale	Q	PR
6	<i>Aonidiella orientalis</i>	oriental scale	A	FL (6)
2	<i>Aphididae family</i>	aphid	Q	CA (1), VA (1)
3	<i>Aspidiella sacchari</i>	armored scale	Q	FL (3)
1	<i>Aulacaspis sp.</i>	armored scale	Q	HI

Interceptions	Scientific Name	Common Name	Rating	Origin
5	<i>Aulacaspis tubercularis</i>	armored scale	Q	FL (3), PR (1), Unknown (1)
1	<b>Bactrocera dorsalis group</b>	<b>exotic fruit fly</b>	<b>A</b>	HI
2	<i>Bephratelloides sp.</i>	eurytomid wasp	Q	FL (2)
1	<i>Brentidae</i>	straight-snouted weevils	Q	FL
1	<i>Callosobruchus sp.</i>	bean weevil	Q	HI
6	<b>Candidatus Liberibacter asiaticus</b>	<b>citrus greening</b>	<b>A</b>	FL (4), PR (2)
1	<i>Cardiocondyla sp.</i>	ant	Q	FL
1	<i>Caryobruchus sp.</i>	seed weevil	Q	PR
2	<i>Cerambycidae</i>	longhorn beetle	Q	FL (1), LA (1)
1	<i>Cercospora cf. flagellaris</i>	leaf spot	Q	TX
2	<i>Ceroplastes floridensis</i>	florida wax scale	A	FL (2)
1	<i>Chalcididae</i>	wasp	Q	FL
1	<i>Chenopodium ambrosioides</i>	wormseed	Z	CA
1	<i>Chionaspis sp.</i>	armored scale	Q	FL
1	<i>Chrysididae</i>	cuckoo wasp	Q	MN
2	<i>Cicadellidae</i>	leaf hopper	Q	HI (1), IL (1)
16	<i>Coccidae family</i>	scale insects	Q	FL (14), PR (1), TX (1)
1	<i>Coccus capparidis</i>	capparis soft scale	Q	FL
1	<i>Coccus sp.</i>	soft scale	Q	unknown
1	<i>Coccus viridis</i>	green scale	A	FL
1	<i>Colletotrichum sp.</i>	plant pathogen	Q	FL
4	<i>Curculionidae family</i>	weevil	Q	IL (1), MA (1), MS (1), NC (1)
1	<b>Cuscuta campestris</b>	<b>dodder</b>	<b>W</b>	FL
1	<b>Cydia caryana</b>	<b>hickory shuckworm</b>	<b>A</b>	PA
2	<i>Delottococcus confusus</i>	mealybug	Q	HI (2)
26	<i>Diaspididae family</i>	scale insects	Q	CA (1), FL (14), IL (1), NJ (2), PR (7), TX (1)
1	<i>Diptera order</i>	fly	Q	FL
11	<i>Dysmicoccus grassii</i>	mealybug	A	FL (11)
1	<i>Dysmicoccus sp.</i>	mealybug	Q	FL
1	<i>Dysmicoccus texensis</i>	coffee root mealybug	Q	MI
1	<i>Euphorbia sp.</i>	spurge	Z	Israel
1	<i>Eurosta solidaginis</i>	goldenrod gall fly	Q	MI
5	<i>Ferrisia dasyliirii</i>	mealybug	Q	FL (4), MS (1)
3	<i>Ferrisia sp.</i>	mealybug	Q	FL (3)
1	<i>Frankliniella tritici</i>	flower thrips	A	MA
4	<i>Gastropoda order</i>		Q	FL (3), NJ (1)
1	<i>Geotomus pygmaeus</i>	burrowing bug	Q	HI
1	<i>Gryllidae family</i>	cricket	Q	FL
2	<b>Gymnosporangium juniperi-virginianae</b>	<b>Cedar apple rust</b>	<b>A</b>	MA (2)
1	<i>Howardia biclavis</i>	mining scale	A	TX
11	<i>Insecta class</i>		Q	FL (5), HI (2), IL (1), ME (1), TX (2)
1	<i>Isoptera order</i>	termite	Q	PR
1	<i>Lamiaceae (possibly)</i>	mint	Z	FL
1	<i>Lasiodiplodia iraniensis</i>	black-soot disease	Q	PR

Interceptions	Scientific Name	Common Name	Rating	Origin
1	<i>Lepidoptera order</i>	moth	Q	FL
3	<i>Lindingaspis floridana</i>	armored scale	Q	FL (3)
1	<i>Lopholeucaspis cockerelli</i>	cockerell scale	A	MS
3	<i>Maconellicoccus hirsutus</i>	pink hibiscus mealybug	A	FL (3)
3	<i>Milviscutulus mangiferae</i>	mango shield scale	Q	FL(2), NJ (1)
1	<i>Mycetaspis personata</i>	masked scale	Q	FL
1	<i>Neofusicoccum batangarum</i>	plant pathogen	Q	FL
1	<i>Paracoccus ferrisi</i>	mealybug	Q	CA
1	<i>Parlatoria ziziphi</i>	black citrus scale	A	PR
2	<i>Phalacrocooccus howertoni</i>	soft scale	Q	FL (2)
6	<i>Phalacrocooccus howertoni</i>	soft scale	Q	FL (6)
1	<i>Pheidole megacephala</i>	bigheaded ant	Q	FL
7	<i>Pheidole sp.</i>	ant	Q	FL (3), HI (4)
1	<i>Philephedra tuberculosa</i>	soft scale	Q	FL
1	<i>Phlaeothripidae</i>	tube-tail thrips	Q	FL
1	<i>Phyllophaga sp.</i>	scarab beetle	Q	AR
1	<i>Pinnaspis buxi</i>	boxwood scale	A	HI
4	<i>Pinnaspis strachani</i>	lesser snow scale	A	PR (4)
1	<i>Planococcus sp.</i>	mealybug	Q	FL
1	<i>Plumbago scandens</i>	leadword/doctorbush	Z	FL
1	<i>Prococcus acutissimus</i>	slender soft scale	Q	FL
2	<i>Pseudaonidia duplex</i>	camphor scale	Q	FL (2)
2	<i>Pseudaonidia trilobitiformis</i>	trilobe scale	Q	FL (2)
3	<i>Pseudaulacaspis cockerelli</i>	magnolia white scale	A	FL (2), SC (1)
1	<i>Pseudaulacaspis sp.</i>	armored scale	Q	FL
22	<i>Pseudococcidae family</i>	mealybug	Q	CA (1), FL (12), HI (5), PR (4)
2	<i>Pseudococcus jackbeardsleyi</i>	mealybug	Q	FL (2)
1	<i>Pseudococcus lycopodii</i>	club moss mealybug	Q	HI
1	<i>Pseudococcus odermatti</i>	mealybug	Q	FL
3	<i>Pseudococcus sp.</i>	mealybug	Q	FL (2), KS (1)
1	<i>Pseudomyrmex gracilis</i>	ant	Q	LA
1	<i>Psychidae family</i>	bagworm	A	GA
3	<i>Psyllidae family</i>	psyllid	Q	FL (2), TX (1)
1	<i>Pulvinaria sp.</i>	soft scale	Q	FL
4	<i>Pyrilidae family</i>	snout moth	Q	FL (1), NJ (1), NY (1), PR (1)
1	<i>Pyrgomorphidae family</i>	grasshopper	Q	TX
1	<i>Radionaspis indica</i>	mango scale	Q	PR
1	<i>Rhagoletis suavis</i>	walnut husk fly	A	PA
1	<i>Rutherfordia major</i>	lychee bark scale	Q	FL
1	<i>Scirtothrips dorsalis</i>	thrips	Q	FL
2	<i>Scolytidae family</i>	bark beetle	Q	FL (1), HI (1)
2	<i>Selenothrips rubrocinctus</i>	redbanded thrips	A	FL (2)
1	<i>Sesiidae</i>	clearwing moths	Q	FL
2	<i>Subulinidae family</i>	snail	A	FL (1), TX (1)
3	<i>Technomyrmex difficilis</i>	white-footed ant	Q	FL (3)

Interceptions	Scientific Name	Common Name	Rating	Origin
1	<i>Tettigoniidae Family</i>	katydid	Q	HI
3	<i>Thripidae family</i>	thrips	Q	HI (1), PR (1), VA (1)
17	<i>Thysanofiorinia nephelii</i>	longan scale	Q	FL (17)
2	<i>Thysanoptera order</i>	thrips	Q	KS (1), PR (1)
1	<i>Thysanoptera order</i>	thrips	Q	OH
2	<i>Tortricidae family</i>	moth	Q	FL (1), TX (1)
<b>Total: 289</b>				

### Highlights of County Dog Team Interceptions

Dog team interceptions from July 1, 2014 to December 31, 2014, resulted in the interception 1 W-rated invasive dodder plant, 221 Q-rated pests, and 62 A-rated pests. Of these pest interceptions, there were 6 interceptions of the huanglongbing, 12 exotic fruit fly interceptions and other notable finds, such as, walnut husk fly, hickory shuckworm, and cedar apple rust. These quarantine pests are not known to occur in California and the dog team interceptions were critical to prevent the establishment of detrimental pest in California. The narratives below detail examples of interesting interceptions during the reporting period.

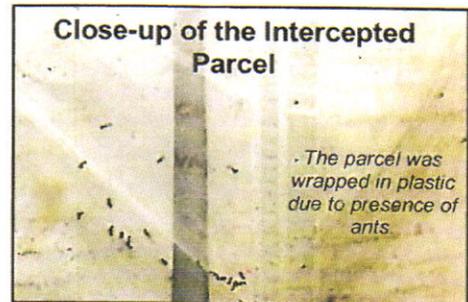
### Examples of Alameda County Dog Team Interceptions

Summary of Interception Highlights:

1. Multiple Pest Interception Dodder, Scale, and Ants
2. *Florida Tropical Fruit Shipment*
3. *Fruit Fly Larva Interception*
4. Exotic Fruit Fly Intercepted at USPS Facility
5. *Huanglongbing Interception on Florida Limes*
6. *Huanglongbing Intercepted on Package Containing Premade Dinners*
7. *Lasiodiplodia iraniensis on Puerto Rico Avocados*
8. Potted Plant Interception

#### Multiple Pest Interception Dodder, Scale, and Ants

On July 10, 2014, while working at a USPS facility, Alameda County Inspector/Handler Lisa Sampson and canine Cosmo alerted to an **unmarked parcel from Florida**. Inspector Keely Kirkman attempted to contact the shipper or receiver, but was unable to and released the parcel back to USPS. However, due to the large amount of ants crawling on the outside of the box, the parcel was wrapped in plastic and USPS placed the parcel in Hazmat.



The County collected ants from the outside of the parcel and submitted them to the Plant Pest Diagnostics Laboratory resulting in **Q-rated *Pheidole megacephala*** (bigheaded ant).

The receiver surrendered the shipment to USPS, and USPS contacted the Alameda County Department of Agriculture to inspect the parcel. The shipment was found to contain **W-rated *Cuscuta campestris*** (dodder) and **Q-rated *Phalacroccoccus howertoni*** (soft scale).

### Florida Tropical Fruit Shipment

On August 27, 2014, while conducting an inspection at the USPS facility in Oakland, Alameda County Inspector/Handler Lisa Sampson with canine Cosmo alerted on two parcels being shipped from Florida to a receiver in Fremont. The parcels were placed on hold. Inspector Chris Craft was granted permission from the receiver to inspect both parcels. The parcels contained longan fruit and custard apple fruit.

#### Parcel Contents: Longan and Custard Apple Fruit



Samples submitted to the Plant Pest Diagnostics Laboratory were identified as **A-rated *Aonidella orientalis*** (oriental scale), **Q-rated:** Diptera (fly), *Thysanofiorinia nephelii* (longan scale), *Technomyrmex difficilis* (ant), *Mycetaspis personata* (masked scale), *Pseudococcus* sp. (mealybug), *Ferrisia dasyliirii* (mealybug), Coccidae (scale), Gastropoda (snail), and C-rated *Saissetia oleae* (black scale), *Carpophilus* sp. (sap beetle).

On the September 11, 2014, another **unmarked package of custard apples from Florida** was intercepted while inspecting at the USPS facility in Oakland. Inspector Chris Craft obtained consent to open the parcel from the receiver. The parcel contained custard apples which had a heavy infestation of pests on the surface of the fruit. The custard apples were confiscated. Samples were submitted to the Plant Pest Diagnostics Laboratory and identified as **A-rated *Dysmicoccus grassii*** (mealybug), **Q-rated Tortricidae** (moth) and other C- and D-rated pests.



### Fruit Fly Larva Interception



#### Confiscated Sapodilla

On the morning of September 4, 2014, while inspecting at the USPS facility in Oakland, canine Cosmo alerted on an **unmarked parcel shipped from Orlando, Florida**. Alameda County's Dog Team Inspector/Handler Lisa Sampson placed the parcel on hold for inspection. Inspector Chris Craft obtained consent to open the parcel from the receiver later that morning. The parcel contained *Spondias* (hog plums) and *Manilkara zapota* (sapodilla).

The sapodilla contained larvae of **A-rated *Anastrepha* sp.** (fruit fly).

### Exotic Fruit Fly Intercepted at USPS Facility

On September 11, 2014, while conducting an inspection at the USPS facility in Oakland, Alameda County Inspector/Handler Lisa Sampson



with canine Cosmo alerted to a parcel shipped from Florida to a receiver in Hayward, California. The parcel was placed on hold before Inspector Chris Craft was granted permission from the shipper to inspect the parcel. The parcel contained guava fruit along with non-agricultural items. **Live fruit fly larva were intercepted** as a result of the inspection. Samples were submitted to the Plant Pest Diagnostic Laboratory where DNA analysis confirmed **A-rated *Anastrepha suspensa*** (Caribbean fruit fly).

#### Intercepted Guava and Caribbean Fruit Fly Larva



#### Huanglongbing Interception on Florida Limes

On September 3, 2014, while conducting an inspection at the USPS facility in Oakland, canine Cosmo of the Alameda County Dog Team alerted on a **parcel shipped from Florida** to a receiver in Newark, California. The parcel was placed on hold by Inspector/Handler Lisa Sampson. Inspector Chris Craft obtained permission from the receiver to open the parcel for inspection. The parcel contained limes, avocado, passion fruit, and spices.

Inspector Craft submitted live pests and limes to the Plant Pest Diagnostics Laboratory. The Laboratory identified **A-rated *Candidatus Liberibacter asiaticus*** (huanglongbing or HLB) using real-time PCR, as well as, other B- and C-rated pests.

#### A-rated Huanglongbing found on Infested Limes



#### Huanglongbing Intercepted on Package Containing Premade Dinners

Huanglongbing was intercepted by again by Alameda County on December 4, 2014, while conducting an inspection at the FedEx facility in Pleasanton. Inspector Keely Kirkman intercepted an **unmarked and unknown origin lemon and grapefruit parcel** shipped by Peachdish Company ready to prepared dinners from Georgia to a receiver in Livermore, Alameda County. Upon inspection the shipment contained assorted produce including one pound of lemon and grapefruit.

### Intercepted Parcel Containing Ready-to-Make-Dinners



A lemon fruit sample was submitted to the Plant Pest Diagnostics Laboratory. The laboratory identified **A-rated *Candidatus Liberibacter asiaticus*** (huanglongbing or HLB) using real-time PCR.

### Foreign Fungus on Puerto Rico Avocados

On July 2, 2014, while conducting an inspection at the USPS facility in Oakland, canine Cosmo of the Alameda County Dog Team alerted on an **unmarked parcel shipped from Puerto Rico** to a receiver in Union City. The parcel was placed on hold by Inspector/Handler Lisa Sampson. Inspector Chris Craft obtained permission from the receiver to open the parcel for inspection. Avocados were confiscated and the remainder of the parcel was released for delivery. Inspector Craft submitted samples to the Plant Pest Diagnostics Laboratory where the fungal pathogen *Lasiodiplodia iraniensis* was detected in culture of the fruit. In November 2014, the identification was confirmed by the USDA lab in Beltsville, MD.

The **fungus is not known in the US** and was given a Q-rating. This pathogen had not previously been reported on avocado, it has been reported on *Citrus*, *Juglans*, *Mangifera* and *Salvadora* in Iran, Brazil, and Colombia.

### Potted Plant Interception

On November 7, 2014, while conducting an inspection, Alameda County canine Cosmo with Inspector/Handler Lisa Sampson intercepted an **unmarked parcel at FedEx Ground**, located in San Leandro. The parcel originated from South Carolina and was on route to an addressee in Oakland, Alameda County. Inside the parcel was one potted *Aucuba japonica* (Japanese aucuba) plant. Inspector Sampson noted live pests on the foliage, in addition to, a lack of any marking or certification during inspection.

Samples were submitted to the Plant Pest Diagnostics Laboratory and identified as an **A-rated *Pseudaulacaspis cockerelli*** (magnolia white scale).

### Pests on Japanese aucuba Plant Leaves



## Examples of Contra Costa & Santa Clara County Dog Team Interceptions

### **Pecans from North Carolina**

On December 10, 2014, while conducting an inspection at the main USPS Office in Contra Costa County, Canine Handler Cecilie Siegel with dog Conan intercepted an **unmarked parcel**. Permission was granted by the shipper to inspect and destroy the package. The shipper disclosed that she had been sending pecans to her brother for the last ten years. The parcel originated from Washington, North Carolina and was being shipped to San Jose in Santa Clara County.

Santa Clara County Inspectors Julius Calso, Paulo Philippidis, and Supervising Biologist Helena Roberts opened the parcel and found two bags of unhusked pecans. The inspectors broke open the husks of several pecans and found several specimens of live larva. Samples were submitted to Plant Pest Diagnostic Laboratory and identified as Q-rated Curculionidae (weevil).

### **Shipment of Pecans Infested with Live Larva**



### **Huanglongbing Interception**

On December 3, 2014, Contra Costa County Dog Team Inspectors/Handler Cecilie Siegel with dog Conan intercepted an **unmarked box of oranges** in San Jose USPS distribution facility. The box originated from Florida and was en route to an addressee in San Jose, Santa Clara County. Santa Clara County inspectors Paulo Philippidis and Julius Calso contacted the sender by telephone and obtained permission to inspect the box but the sender requested that the box was returned to the shipper after the completion of the inspection.

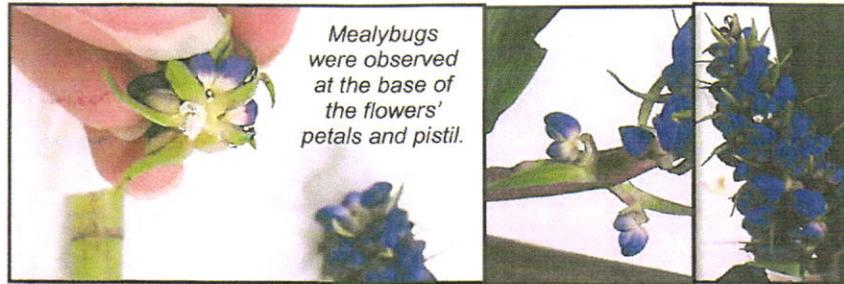
The inspectors noticed scarring on the fruit and samples sent to the Plant Pest Diagnostic Laboratory were found positive for **A-rated *Candidatus Liberibacter asiaticus*** (citrus greening or huanglongbing or HLB) using real-time PCR tests.

## Examples of Fresno County Dog Team Interceptions

### **Hawaiian Flower Interceptions**

Fresno County Inspector/Handler Stephanie LeBarron and dog Chelsea intercepted Hawaiian shipments of cut flowers infested with quarantine significant pests. On July 16, 2014, a shipment of cut foliage containing bromeliads, heliconia, and various ginger cut flowers. Upon inspection, a heavy infestation of live mealybugs was found and identified as Q-rated mealybug crawlers (*Pseudococcidae*) and Q-rated mite eggs (*Acari*).

## Shipment of Hawaiian Cut Flowers Found Infested with Live Mealybug Crawlers



On July 29, 2014, mealybugs were again intercepted on a shipment of Hawaiian cut foliage containing Hawaiian club moss and red tower ginger. The pests were identified as Q-rated mealybug crawlers (*Pseudococcidae*) and Q-rated club moss mealybug (*Pseudococcus lycopodii*).

On September 3, 2014, while conducting inspections at FedEx in Fresno, K-9 Chelsea alerted to a properly marked box of Hala leaves. Inspection of the plant material yielded **A-rated *Pinnaspis buxi*** (boxwood scale) and Q-rated insect eggs.

### Backyard Fruit Shipment

On August 14, 2014, Inspector Laine Bauer, Inspector/Handler Stephanie LeBarron, and dog Chelsea were working at FedEx Air. Chelsea alerted to an **unmarked, uncertified box containing mangos**, avocados, yam, and bread shipped from New York. Upon inspection, Inspector Bauer collected scale on the mangos.

The specimens were submitted to the Plant Pest Diagnostic Laboratory and identified as **A-rated vanda orchid scale** (*Parlatoria pseudaspidotus*).



## Examples of Los Angeles County Dog Team Interceptions

### Huanglongbing Interception

On November 5, 2014, Los Angeles County Dog Team Inspector/Handler Rogelio Carranza with dog Tahoe intercepted an **unmarked package at USPS** facility. The box originated from Florida and was en route to an addressee in Los Angeles County. Agricultural Inspector Daniel Delgado contacted the shipper by telephone and obtained permission to inspect the box. Inside the package were oranges and dried Moringa leaves.

Samples of scale insects were collected from the oranges, which also appeared to be symptomatic for huanglongbing (HLB). Inspector Delgado submitted the samples to the Plant Pest Diagnostics (PPD) laboratory for identification and B-rated scale was identified. Samples were also submitted to the PPD laboratory to be screened for HLB. In early December, the laboratory notified Los Angeles County that the oranges had tested positive for A-rated *Candidatus Liberibacter asiaticus*, the HLB pathogen.

## Shipment of HLB Positive Oranges and Moringa Leaves



## Examples of San Bernardino County Dog Team Interceptions

### Mango Shield Scale Interception

On September 25, 2014, while conducting an inspection at a FedEx home facility in Riverside County, Canine Handler Kristina Cummings and her dog Bishop intercepted a **box from Florida** containing three potted trees, two mangos, and one Surinam cherry tree. The shipment was properly marked and certified. Upon inspection of the trees, Riverside County Inspector Ting Hsiung and San Bernardino County Assisting Inspector Josh Hardeman collected samples of live ants from the cherry tree and scale pests from the mangos. Both plants were heavily infested with pests.

The inspectors submitted samples to the Plant Pest Diagnostic Laboratory where entomologists identified the scale as **Q-rated *Milviscutulus mangiferae*** (mango shield scale) and the ants as C-rated *Linepithema humile* (Argentine ant).

## Examples of San Diego County Dog Team Interceptions

### New *Neofusicoccum* Fungus Detected

On June 25, 2014, Inspector/Handler Jeremy Partch and canine Venus were conducting inspections at FedEx. Venus alerted to a **parcel shipped from Florida**. Inspector Jason Sapp opened the uncertified and unmarked parcel containing nine pounds of mangos. Upon inspection of the mangos, the inspector collected live pests from the skin of the mango fruit.

A sample was submitted to the Plant Pest Diagnostics Laboratory and it was identified as **Q-rated *Neofusicoccum mangiferae* (fungus)**. Two different species of *Neofusicoccum* were detected in culture from fruit. *Neofusicoccum mangiferae* was confirmed by USDA mycologist on September 25, 2014. This species mainly attacks mango rachises branches and inflorescences but is also a pathogen of *Aganthis*, *Disoscorea*, *Eucalyptus*, *Manihot* and *Prunus*. Found in Africa, Asia, Caribbean, Europe, Australia and Uruguay. As there are not any known reports in US, the USDA will follow-up with the Florida Division of Plant Industry. Additionally, another *Neofusicoccum* sp. was detected. It is closest to *Neofusicoccum batangarum* by molecular sequencing but may be a novel, closely-related species.



## Examples of Sacramento and Yolo County Dog Team Interceptions

Summary of Interception Highlights:

1. Fruit Fly Interceptions
2. Backyard Fruit Shipment
3. eBay Houseplant Shipment
4. Hawaiian Fruit Interception
5. Tephritidae (Fruit Fly)
6. Huanglongbing Interception
7. Fresh Flowers from Massachusetts
8. Hawaiian Avocado Interception

### **Fruit Fly Interception**

On August 7, 2014, Sacramento County Dog Team Inspector/Handler Jennifer Berger with detector dog Dozer intercepted a package at the West Sacramento USPS distribution facility. The package originated in Florida and was en route to Sacramento County. Yolo County inspector Kevin Martyn contacted the receiver by telephone and was granted permission to inspect the package. Inside the package were six *Psidium* sp. (guava) fruit.

#### **Fruit Fly Larva Infested Guava**



Suspect fruit fly exit holes were noted on several of the fruit. When cut open, dozens of fly larvae were found. The Plant Pest Diagnostics Laboratory determined the larvae to be **A-rated *Anastrepha* sp.** (fruit fly).

### **Backyard Fruit Shipment**

On August 15, 2014, Sacramento County Dog Team Inspector/Handler Jennifer Berger with dog Dozer intercepted a package at the West Sacramento USPS distribution facility. The box originated from Mississippi and was en route to Stanislaus County. Yolo County inspector Kevin Martyn contacted the receiver and was granted permission to inspect the contents.

The package contained 21 fresh pears and a baggie of very pungent, edible peppers. The pears appeared to have some scarring at the blossom end of the fruit. Under magnification, the "scars" revealed scale insects. The Plant Pest Diagnostics Laboratory identified the scale as **A-rated *Lopholeucaspis cockerelli*** (cockerell scale).

### Intercepted Pear Fruit Infested with Cockerell Scale



### eBay Houseplant Shipment Interception

On August 15, 2014, Sacramento County Dog Team Inspector/Handler Jennifer Berger with dog Dozer intercepted two packages from an eBay seller at the West Sacramento USPS distribution facility. The boxes originated from Florida and were en route to Sacramento and San Joaquin Counties. All listed shipper and receiver telephone numbers were disconnected. Soil was falling out of the seams of both boxes. In an effort to locate the shipper, Yolo County inspector Kevin Martyn performed a search on eBay for “plants” within a two-mile radius of the shipper zip code. He was able to identify the seller by corporate name and e-mailed a request for response. The seller responded by telephone and granted permission to inspect the shipments.

The package headed for San Joaquin County contained a live plant of *Annona squamosa* (sugar apple) and contained live ants. The second package, on the way to Sacramento County, contained a live plant of *Wrightia religiosa* (water jasmine) infested with scale insects. The Plant Pest Diagnostic Laboratory identified the ants as C-rated *Brachymyrmex* sp. (ant) and the water jasmine harbored **A-rated *Coccus viridis*** (green scale).

### Oriental Fruit Fly on Hawaiian Package

On July 31, 2014, Sacramento County Dog Team Inspector/Handler Jennifer Berger with dog Dozer intercepted a package at the West Sacramento USPS distribution facility. The box originated from Hawaii and was en route to Amador County.

Amador County inspector Carrie Bassett made in-person contact with the receiver, who gave permission to inspect the shipment. The package contained 15 fresh *Psidium* sp. (guava fruit) and various other non-fruit items. Live fruit fly larvae were found inside the fruit, live mealybugs were present on the surface of the fruit, and live ants were found inside the box. The Plant Pest Diagnostic Laboratory identified **A-rated *Bactrocera dorsalis* group** (Oriental fruit fly), Q-rated Pseudococcidae (mealybug), and C-rated *Brachymyrmex* sp. (ant).

### Intercepted Guava Fruit and Oriental Fruit Fly Larvae



### **Caribbean Fruit Fly on Puerto Rican Fruit**

On September 25, 2014, Sacramento County Dog Team Inspector/Handler Jennifer Berger with dog Dozer intercepted a package at the West Sacramento USPS distribution facility. The box originated from Puerto Rico and was en route to an addressee in Roseville, Placer County. Yolo County inspectors Bill Lyon and Kevin Martyn contacted the shipper by telephone and obtained permission to inspect the box. Inside the package was approximately two pounds of avocados and five mangos.

**Intercepted Mangos:** Note Fruit Fly Larva and Exit Holes



During inspection, suspect fruit fly exit holes were noted on one of the mangos and fly pupae were found in the bottom of the box. When cut open, dozens of fly larvae of various life stages were found. The Plant Pest Diagnostics Laboratory determined the larvae to be Q-rated Tephritidae (fruit fly) and forwarded the larvae for more specific identification for molecular testing which resulted in **A-rated *Anastrepha obliqua*** (Caribbean fruit fly). Q-rated Diaspididae (scale) was also intercepted.



**Caribbean Fruit Fly:** Various Life Stages of Fruit Fly Larvae

### **Huanglongbing and Black Citrus Scale Intercepted**

On September 25, 2014, Sacramento County Dog Team Inspector/Handler Jennifer Berger with dog Dozer intercepted a package at the West Sacramento USPS distribution facility. The box originated from Puerto Rico and was en route to an addressee in Roseville, Placer County. Yolo County inspectors Bill Lyon and Kevin Martyn contacted the shipper by telephone and obtained permission to inspect the box. Inside the package was approximately two pounds of citrus fruit, three pounds of bananas, and two pounds of taro corms.

During the inspection of package, several scale pests were intercepted on the surface of the citrus fruit. Samples were submitted to the Plant Pest Diagnostics (PPD) Laboratory and identified as **A-rated *Parlatoria ziziphi*** (black citrus scale), Q-rated Pseudococcidae (mealybug), Q-rated Diaspididae (scale), and Q-rated *Aonidiella aurantii* (California red scale).

The inspectors also submitted the citrus fruit to PPD Laboratory for plant pathology examination. Scientist Lucita Kumagai tested the sample by real-time and conventional PCR and on October 20, 2014, the sample tested positive for **A-rated *Candidatus Liberibacter asiaticus*** (huanglongbing, HLB, or citrus greening disease).

#### Intercepted Citrus found Infested with Black Citrus Scale and Huanglongbing



#### Huanglongbing Intercepted

On October 29, 2014, Sacramento County Dog Team Inspector/Handler Jennifer Berger with dog Dozer intercepted a package at the West Sacramento USPS distribution facility. The box originated from Florida and was en route to an addressee in Rocklin, Placer County. Yolo County inspectors Bill Lyon and Kevin Martyn contacted the sender by telephone and obtained permission to inspect the box. Inside the package were approximately two pounds of *Citrus* sp. (citrus leaves), one pound of *Solanum torvum* (Turkeyberry fruit), 50 stems of *Pandanus amaryllifolius* (pandan) and one pound of several types of unknown leaves.

The citrus leaves were submitted to the Plant Pest Diagnostics (PPD) laboratory for plant pathology examination. Scientist Lucita Kumagai tested the sample by real-time PCR and it was found positive for A-rated *Candidatus Liberibacter asiaticus* (citrus greening or huanglongbing or HLB). **Sacramento County's dog team and Yolo county inspectors intercepted HLB five times during 2014.**

#### Sacramento County Dog Team Inspector/Handler Jennifer Berger with dog Dozer



### Fresh Flowers from Massachusetts

On October 29, 2014, Sacramento County Dog Team Inspector/Handler Jennifer Berger with dog Dozer intercepted a package from Massachusetts at the West Sacramento USPS distribution facility. The box originated from Massachusetts en route to an addressee in Woodland, Yolo County. Yolo County inspectors Bill Lyon and Kevin Martyn contacted the sender by telephone and obtained permission to inspect the box. Inside the package they found four types of fresh flower heads: *Rudbeckia hirta* (black-eyed susan), *Echinacea* sp. (coneflowers), *Chrysanthemum* sp. (daisy) and Asteraceae (aster).

During inspection of the package, thrips were intercepted in one of the aster flower heads. A sample was submitted to the Plant Pest Diagnostic Laboratory and identified as an **A-rated *Frankliniella tritici*** (Easter flower thrips).

### Flower Heads Infested with Eastern Flower Thrips



### Hawaiian Avocado Interception

On October 30, 2014, Sacramento County Dog Team Inspector/Handler Jennifer Berger with dog Dozer intercepted an **unmarked package from Hawaii** at the West Sacramento USPS distribution facility. The box originated from Hawaii and was en route to an addressee in Atwater, Merced County. Yolo County inspectors Bill Lyon and Kevin Martyn contacted the sender by telephone and obtained permission to inspect the box. Inside the package were approximately two pounds of *Persea* sp. (avocado) from Hawaii.

### Intercepted Avocado Shipment



During the inspection of the package, several ants were located in the box of avocados. A sample was submitted to the Plant Pest Diagnostic Laboratory and identified as **Q-rated *Pheidole* sp.** (ant).

#### **Florida Backyard Fruit Interception**

On October 29, 2014, Sacramento County Dog Team Inspector/Handler Jennifer Berger with dog Dozer intercepted a package at the West Sacramento USPS distribution facility. The box originated from Florida and was en route to an addressee in Rocklin, Placer County. Yolo County inspectors Bill Lyon and Kevin Martyn contacted the sender by telephone and obtained permission to inspect the box. Inside the package were approximately **two pounds of *Citrus* sp.** (citrus leaves), one pound of *Solanum torvum* (Turkeyberry fruit), 50 stems of *Pandanus amaryllifolius* (pandan) and one pound of several types of unknown leaves.

Pests found on citrus leaves were submitted to the Plant Pest Diagnostics laboratory for identification and identified as **A-rated *Aleurocanthus woglumi*** (citrus blackfly), **A-rated *Ceroplastes floridensis*** (Florida wax scale), Q-rated *Coccus capparidis* (capparis soft scale), Q-rated *Cardiocondyla* sp. (ant), Q-rated Psyllidae larvae and Q-rated insect pupa. *Pandanus amaryllifolius* (pandan stems) harbored Q-rated Pseudococcidae (mealybugs). During the inspection of the package, several B-, C-, and D-rated pests were also found on the surface of the citrus leaves and pandan stems.

**Infested Citrus Leaves and Close-Up of Surface Pests**



#### **Black Walnuts Harbor A-Rated Pest**

On November 14, 2014, Contra Costa County Dog Team Inspector/Handler Mariah de Nijs with dog Cairo intercepted five packages at the West Sacramento USPS distribution facility. The boxes originated from Pennsylvania and were en route to an addressee in Camptonville, Yuba County. Yolo County inspectors Bill Lyon and Kevin Martyn contacted the sender and receiver (sisters) by telephone and obtained permission to inspect the boxes. The total of the boxes included approximately 25 pounds of what the receiver identified as black walnuts from a forest tree on the family property and all nuts had husks intact.

**Black Walnut Shipment:** Containing 25-pounds of Nuts with Husk



The husks were exceptionally thick and teeming with **hundreds of live fly larvae**. Approximately one-dozen pupal cases were found throughout the boxes and the bags inside. The samples were submitted to the Plant Pest Diagnostic laboratory for identification and identified as **A-rated *Rhagoletis suavis*** (tephritid husk fly) and **A-rated *Cydia caryana*** (Hickory Shuckworm). Many other types of larvae emerged from the package, including C- and D-rated fly, moth, and beetle larvae.

**Live Larva Finds**




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**\*A-rated**, a pest of economic or environmental detriment and is either not known to be established in California or it is present in a limited distribution that allows for the possibility of eradication or successful containment.

**\*Q-rated**, an organism or disorder suspected to be of economic or environmental detriment, but whose status is uncertain because of incomplete identification or inadequate information.

**\*W-rated**, a species listed as a noxious weed on California Code of Regulation 4500.

**\*Photos compliments** of Plant Pest Diagnostics Laboratory; Alameda, Contra Costa, Fresno, Los Angeles, San Diego, Santa Clara, Sacramento, and Yolo Counties.

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